Strengthened Senior High School

DepED
DEPARTMENT OF EDUCATION

Learning Activity Sheets for Food Processing

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If you have feedback on the LAS, please accomplish this form, which may be accessed through the following link: **https://tinyurl.com/sshstechprofeedbackform.**

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LEARNING ACTIVITY SHEET (LAS)

Learning Area	**FOOD PROCESSING**	**Term**	1
Lesson Exemplar	**1**	**Date**	
Lesson Title/Topic:	**Overview of Food Processing and Fish Product Packaging** • History of food processing and preservation • Emerging industry trends, technologies and innovations ○ Surimi-based products		
Name		**Grade & Section**	

Learning Competency:

Discuss the overview of food processing and fish product packaging

I. Activity No. 1: Historical Development of Food Processing **(Understanding the Past)**

II. Objective(s):

At the end of the activity, the learners should be able to:

1. **Describe** traditional and historical food preservation methods and explain their significance;
2. **Explain** how modern food-processing technologies improve safety, quality, and efficiency;
3. **Discuss** innovations in fish product packaging and evaluate their role in traceability and sustainability; and
4. **Analyze** the production process and market importance of surimi-based products.

Directions: Read the short timeline below, then answer the questions that follow.

Food Processing Timeline

- **1809 – Nicolas Appert:** Discovered that sealing and heating food prevents spoilage (canning).
- **1810 – Peter Durand:** Introduced the tin can for safer food transport.
- **1862 – Louis Pasteur:** Developed pasteurization to kill harmful microorganisms in liquids.

Guide Questions:

1. Why was food preservation important before modern refrigeration existed?
2. How did canning help improve food safety for soldiers and travelers?
3. Give two traditional food preservation methods used before 1800 and explain their purpose.

- Method 1: _____ Purpose: _____
- Method 2: _____ Purpose: _____

☑ **Check for Understanding:**

Traditional preservation methods helped early humans **survive longer periods without fresh food** and **prevented food spoilage and illness**.

Activity 2: Classifying Traditional vs. Modern Methods (Developing Mastery)

Directions: Classify each food-processing method by placing a ✓ in the correct column.

Food Processing Method	**Traditional**	**Modern**
Drying		
Salting		
Fermentation		
Pasteurization		
High-Pressure Processing (HPP)		
Smart Packaging		
Automated Filleting		

Reflection Question: Why are modern technologies more effective in ensuring food safety than traditional methods?

V. Activity 3: Understanding Emerging Technologies (Concept Application)

A. High-Pressure Processing (HPP)

Directions: Write a short explanation (3–5 sentences).

Question:
Why is High-Pressure Processing (HPP) better than boiling or heating fish products?

Your Answer:

_____

_____

_____

☑ **Key Idea:**
HPP kills harmful microorganisms **without heat**, preserving **texture, flavor, and freshness**.

B. Automation and Smart Sensors

Directions: Complete the sentence:

Automation and smart sensors in food processing help by

Activity 4: Innovations in Fish Product Packaging (Critical Thinking)

Directions: Answer the questions briefly.

1. What is **smart packaging**?

2. How do QR codes or IoT-enabled packaging increase **consumer trust**?

3. Why is **eco-friendly packaging** important for the environment and food industry sustainability?

☑ **Expected Ideas:**

- Traceability
- Product origin and freshness
- Reduced plastic waste
- Consumer confidence

Activity 5: Surimi Production and Industry Analysis (Higher-Order Thinking)

A. Flowchart Activity

Directions: Arrange the steps of surimi production in proper order and draw a simple flowchart.

- Washing
- Forming and Packaging

- Mincing
- Refining
- Adding
- Cryoprotectants

🖉 **Your Flowchart:**
(Start → _____ → _____ → _____ → _____ → End)

B. Analysis Question: Answer in 3–5 sentences.

Why are surimi-based products becoming popular in the global seafood market? (Consider technology, convenience, and consumer demand.)

☑ **Key Ideas to Look For:**

- Advanced processing technology
- Longer shelf life
- Consistent texture and quality
- High demand for ready-to-eat seafood

Assessment Checklist (For Teacher Use)

Criteria	Achieved	Needs Improvement
Explains traditional food preservation	☐	☐
Identifies modern food-processing technologies	☐	☐
Understands smart packaging innovations	☐	☐
Analyzes surimi production and relevance	☐	☐

Conclusion / Reflection (Learner)

One new thing I learned today about food processing or fish packaging is:

_____

_____

_____.

LEARNING ACTIVITY SHEET (LAS)

Learning Area	**FOOD PROCESSING**	**Term**	1
Lesson Exemplar	**2**	**Date**	
Lesson Title/Topic:	**Overview of Food Processing and Fish Product Packaging** ● Career and business opportunities in food processing and fish product packaging Sustainability, ethical and environmental considerations		
Name		**Grade & Section**	

II. LEARNING COMPETENCIES (MELCs)
Discuss the overview of food processing and fish product packaging

At the end of the activity, the learners should be able to:

✓ **Describe** the overview of food processing and fish product packaging and explain its relevance to food safety and quality control;
✓ **Identify** career and business opportunities in food processing and fish product packaging;and
✓ **Discuss** sustainability, ethical, and environmental considerations in modern food processing and packaging industries.

ACTIVITY 1: UNDERSTANDING FOOD PROCESSING AND PACKAGING (Concept Development)

A. Matching Type Activity

Direction: Match Column A (Concept) with Column B (Description). Write the letter of the correct answer.

Column A	**Column B**
1. Food Processing	A. Prevents spoilage and extends shelf life
2. Food Preservation	B. Protects food and provides information
3. Food Packaging	C. Transforms raw food into safe, usable products

Answers:

1. ____ 2. ____ 3. ____

B. Short-Answer Question

1. How does food processing help ensure **food safety and maintain quality control**?

2. Why is proper packaging important in fish and seafood products?

☑ Key ideas: cleanliness, spoilage prevention, contamination control, shelf-life extension

ACTIVITY 2: CAREER AND BUSINESS OPPORTUNITIES (Career Awareness)

Direction: Read the list of jobs and business opportunities in food processing and fish product packaging. Write C if it is a career and B if it is a business opportunity.

Opportunity	**Career (C)**	**Business (B)**
Food Quality Control Inspector	☐	☐
Fish Processing Plant Worker	☐	☐
Surimi Product Manufacturer	☐	☐
Packaging Technologist	☐	☐
Vacuum-Packaged Seafood Business	☐	☐
Cold Storage / Freezing Facility Owner	☐	☐

Reflection Question:

Which career or business opportunity interests you most, and Why?

_____

ACTIVITY 3: SUSTAINABILITY, ETHICAL, AND ENVIRONMENTAL CONSIDERATIONS (Critical Thinking Activity)

Direction: Read each statement and answer the questions that follow.

Situation:

A fish processing company wants to reduce plastic waste while still keeping its fish products safe and fresh.

Guide Questions:

1. What **sustainable packaging options** can the company use?

2. Why is sustainability important in the food processing industry?

3. Give **one ethical responsibility** of food processors to consumers.

☑ Expected ideas:

- Eco-friendly or recyclable packaging
- Reduced pollution and waste
- Honest labeling and food safety

ACTIVITY 4: REAL-WORLD SCENARIO (Application of Learning)

Direction: Read the scenario and answer the questions.

Scenario:
You are working in a fish processing plant that produces surimi-based products. Your task is to ensure the product is safe, properly packaged, and environmentally responsible.

1. What food processing method will you use to maintain product quality?

2. What type of packaging will you recommend, and why?

3. How can the company practice sustainability while packaging surimi products?

ACTIVITY 5: CHECKING UNDERSTANDING

Alternative Response Type

Direction. Write **TRUE** if the statement is correct; otherwise, **FALSE** if it is incorrect.

1. ☐ Proper food packaging helps prevent contamination.
2. ☐ Sustainability is not important in food processing industries.
3. ☐ Food processing creates career and business opportunities.
4. ☐ Ethical practices include honest labeling and consumer safety.
5. ☐ Fish products do not require strict quality control.

REFLECTION

Direction. Complete the sentence:

One important thing I learned today about food processing and fish product packaging is:

_____

_____

_____.

LEARNING ACTIVITY SHEET (LAS)

Learning Area	**FOOD PROCESSING**	**Term**	1
Lesson Exemplar	**3**	**Date**	
Lesson Title/Topic:	**Overview of Food Processing and Fish Product Packaging** ● PNS (Philippine National Standards), Philippine Food safety Laws, RA 10611 (Food Safety Act)3 ● Principles of food quality and safety o Hazard Analysis and Critical Control Points (HACCP) o Sanitation Standard Operating Procedure (SSOP) o Good Manufacturing Practices (GMP) o Current Good Manufacturing Practice (CGMP)		
Name		**Grade & Section**	

II. LEARNING COMPETENCIES (MELCs)
Discuss the overview of food processing and fish product packaging

At the end of the activity, the learners should be able to:

✓ Describe **Philippine National Standards (PNS)** and **RA 10611 (Food Safety Act of 2013);**
✓ Explain how **HACCP, SSOP, GMP, and CGMP** ensure food safety and quality; and
✓ Apply food safety principles in evaluating fish processing and packaging situations.

ACTIVITY 1 – UNDERSTANDING FOOD SAFETY LAWS (Concept Development)

Directions: Read each statement carefully. Write **TRUE** if the statement is correct. If **FALSE**, rewrite the underlined part to make the statement correct.

1. _____ PNS provides uniform food safety and quality standards across the Philippines.
2. _____ RA 10611 is known as the Food Safety Act of 2013.
3. _____ RA 10611 applies **only** to food packaging and not to food processing.
4. _____ The Food Safety Act follows a **farm-to-fork** food safety system.
5. _____ PNS and RA 10611 help Philippine food products meet international safety requirements.

Guide Question:

Why are food safety laws like PNS and RA 10611 important to consumers and food processors?

_____.

ACTIVITY 2 – FOOD SAFETY SYSTEMS ANALYSIS (Understanding and Analysis)

Directions: Write the main function of each food safety system.

Food Safety System	Main Function
HACCP	_____
SSOP	_____
GMP	_____
CGMP	_____

Thinking Question:

Why must **HACCP, SSOP, GMP, and CGMP** be applied **together** in fish processing facilities rather than individually?

_____

_____

ACTIVITY 3 – WORKPLACE APPLICATION SCENARIO (Application and Critical Thinking)

Situation:

A fish processing plant prepares filleted fish for freezing, packaging, and distribution to supermarkets.

Directions: Answer the questions briefly.

1. Which food safety system helps **identify hazards** such as bacteria, chemicals, or physical contaminants during fish filleting?

2. Which system ensures **cleaning and sanitation** of tools, work surfaces, and equipment?

3. What **packaging and labeling requirements** must be followed to comply with **RA 10611**? Mention at least two.

VI. REFLECTION

Complete the sentence:

Applying PNS, RA 10611, HACCP, SSOP, GMP, and CGMP is important because

LEARNING ACTIVITY SHEET (LAS)

Learning Area	FOOD PROCESSING	**Term**	1
Lesson Exemplar	**4**	**Date**	
Lesson Title/Topic:	• Concept of halal and its significance to Islamic principles and practices • Halal dietary laws, permissible and prohibited foods, and food preparation guidelines • Process of halal certification • Principles and procedures of halal slaughter for meat and poultry		
Name		**Grade & Section**	

II. LEARNING COMPETENCIES (MELCs)
Discuss halal principles and practices in food processing
At the end of the activity, the learners should be able to:
✓ Explain the **concept and significance of Halal** in Islamic beliefs and daily food practices;
✓ Identify **Halal, Haram, and Mashbooh foods** and describe proper food preparation guidelines;
✓ Describe the **Halal certification process**, including inspection and compliance; and
✓ Explain the **principles and proper procedures of Halal slaughter (Dhabiha)**

ACTIVITY 1 – UNDERSTANDING HALAL CONCEPTS (Concept Development)

Directions: Read each statement carefully. Write **TRUE** if the statement is correct. If **FALSE**, rewrite the underlined word or part to make the statement correct.

1. _____ **Halal** means food that is permissible according to Islamic law.
2. _____ **Haram** foods include pork, alcohol, blood, and carrion.
3. _____ **Mashbooh** refers to food that is clearly Halal.
4. _____ Halal practices promote cleanliness, ethical preparation, and consumer trust.
5. _____ Halal principles apply only to food and not to daily practices.

Guide Question:

Why is Halal important to Muslim consumers in their daily lives?

_____

ACTIVITY 2 – HALAL FOODS, CERTIFICATION, AND PREPARATION (Analysis Activity)

A. Food Classification

Directions: Classify each food item as HALAL, HARAM, or MASHBOOH.

Food Item	**Classification**
Fresh vegetables	_____
Chicken (Halal-slaughtered)	_____
Pork sausage	_____
Candy with gelatin (source unknown)	_____
Soft drink with alcohol content	_____

B. Halal Certification Process

Directions: Arrange the steps of the Halal certification process in the correct order by numbering them 1–4.

- ☐ Issuance of Halal certificate and logo
- ☐ Submission of documents and ingredient list
- ☐ Inspection of facility, ingredients, and processes
- ☐ Verification of compliance with Halal standards

Guide Question:

Why is Halal certification important for both consumers and food manufacturers?

_____

ACTIVITY 3 – APPLICATION: HALAL INSPECTION AND SLAUGHTER (Application and Critical Thinking)

A. Product Inspection Scenario

Situation:

You are checking a packaged food product in a store.

Answer the questions:

1. What is the **first thing** you should look for to know if the product is Halal?

---

2. What ingredients should you check carefully for possible **Haram or Mashbooh** content?

---

3. Based on your inspection, how will you decide if the product is **Halal, Haram, or Mashbooh**?

B. Halal Slaughter (Dhabiha)

Directions: Arrange the steps of Halal slaughter (Dhabiha) in the correct order.

- ☐ Blood is completely drained from the animal
- ☐ The animal is healthy and treated humanely
- ☐ The name of Allah is invoked by a Muslim slaughterer
- ☐ Specific veins and vessels are cut using a sharp knife

Reflection Question:

Why is humane handling and cleanliness important in Halal slaughter?

_____

REFLECTION

Complete the sentence:

I learned that Halal food processing is important because_____

_____

_____.

LEARNING ACTIVITY SHEET (LAS)

Learning Area	FOOD PROCESSING	**Term**	1
Lesson Exemplar	**5**	**Date**	
Lesson Title/Topic:	**Tools, Materials, and Equipment in Food Processing and Fish Product Packaging** • Food processing and fish product packaging tools and equipment		
Name		**Grade & Section**	

II. LEARNING COMPETENCIES (MELCs)

By the end of this lesson, learners should be able to:

1. Identify tools, materials, and equipment used in food processing and fish product packaging;
2. Describe their functions and uses in ensuring safety and hygiene;
3. Classify tools based on their purpose (cutting, measuring, heating, sealing, packaging, storing); and
4. Demonstrate proper handling, cleaning, and maintenance of basic tools.

III. INSTRUCTIONS TO LEARNERS

- Read each activity carefully.
- Follow directions step-by-step.
- Answer in the spaces provided.
- Perform practical tasks safely and neatly.
- Submit your LAS on the assigned date.

IV. LEARNING ACTIVITIES

A. ACTIVATION OF PRIOR KNOWLEDGE

Activity 1 – WHAT DO I KNOW?

Look at the images (or imagine the items listed). Write the name of the tool.

1. _____ (Used for removing fish scales)
2. _____ (Used for measuring ingredients)
3. _____ (Used to seal plastic packaging)
4. _____ (Used for deboning or slicing fish)
5. _____ (Used to store processed food)

Your Answers:

1.

B. PRESENTATION OF NEW KNOWLEDGE

Activity 2 – MATCH ME!

Match Column A (Tools/Equipment) to Column B (Functions). Write the letter only.

Column A	**Column B**
1. Knife	A. Removes air before sealing
2. Weighing scale	B. Cutting and slicing fish
3. Vacuum sealer	C. Measures solid ingredients
4. Steamer	D. Cooks food using steam
5. Plastic pouch	E. Holds and packs processed products

Your Answers:

1.
2.
3.
4.
5.

C. SKILL DEVELOPMENT

Activity 3 – CLASSIFY ME!

Place each item under the correct category.

Tools/Equipment:

Knife, Fish Scaler, Weighing Scale, Steamer, Measuring Cup, Vacuum Sealer, Plastic Jar, Cutting Board

Categories:

Cutting | Measuring | Heating | Sealing | Packaging/Storing

Category	**Tools/Equipment**
Cutting	_____
Measuring	_____
Heating	_____
Sealing	_____
Packaging/Storing	_____

D. APPLICATION OF KNOWLEDGE

Activity 4 – SIMULATED TASK

Perform the assigned task. Check ✓ the tasks you completed.

Choose any 3 tasks below:
☐ Measure ingredients for fish pickling
☐ Debone a fish using proper tools
☐ Seal a plastic packaging properly
☐ Arrange and sanitize a workstation

Teacher Observation Checklist (to be filled by teacher):

- ☐ Proper tool use
- ☐ Clean and safe work habits
- ☐ Organized workstation
- ☐ Correct procedure followed

E. GENERALIZATION

Activity 5 – COMPLETE ME!

Fill in the missing words.

1. Tools used for measuring ingredients are _____.
2. Tools used for removing fish scales are called _____.
3. A _____ is used to remove air from packaging.
4. Tools must be cleaned and dried to maintain _____.
5. Choosing the right tool helps ensure _____ and product quality.

F. EVALUATION TASK

Activity 6 – SHORT QUIZ

B. IDENTIFICATION

1. Tool used for slicing fish: _____
2. Material used for packing smoked fish: _____
3. Equipment used for steaming food: _____

B. TRUE OR FALSE

Write **T** if true and **F** if false.
4. ___ Proper tool cleaning prevents contamination.
5. ___ Damaged tools are safe to use if carefully handled.

G. ADDITIONAL ENRICHMENT ACTIVITY (OPTIONAL)

Choose ONE:

☐ Research modern packaging equipment used in Philippine fish processing plants.
☐ Create a mini-poster explaining proper cleaning of tools.
☐ Interview a vendor or fish processor about the tools they use.

H. ANSWER KEY (FOR TEACHERS ONLY)

(Do not distribute to students)

Activity 1:

1. Fish scaler
2. Measuring tools
3. Heat sealer
4. Knife
5. Container/Jar

Activity 2:

1 – B
2 – C
3 – A
4 – D
5 – E

Activity 3 (Sample answers):

- Cutting: Knife, Cutting board
- Measuring: Weighing scale, Measuring cup
- Heating: Steamer
- Sealing: Vacuum sealer
- Packaging/Storing: Plastic pouch, Plastic jar

Activity 5:

1. Measuring tools
2. Fish scalers
3. Vacuum sealer
4. Hygiene
5. Safety

Activity 6:

1. Knife
2. Vacuum pouch
3. Steamer
4. T
5. F

Synthesis

The Learning Activity Sheet (LAS) provided learners with a comprehensive introduction to the **foundations, practices, and emerging trends in food processing and fish product packaging**. It allowed learners to understand both the theoretical concepts and practical applications necessary in the food processing industry.

Learners explored the **history of food processing and preservation**, gaining insight into how traditional methods evolved into modern techniques to ensure food safety, quality, and longer shelf life. This historical perspective helped learners appreciate the importance of innovation, including the development of **emerging technologies such as surimi-based products**, which highlight advancements in fish processing and product diversification.

The LAS also introduced learners to **career and business opportunities** in food processing and packaging, emphasizing its role as a growing industry with significant potential for entrepreneurship. In addition, learners developed awareness of **sustainability, ethical practices, and environmental considerations**, promoting responsible production and resource management.

A critical component of the LAS focused on **food safety standards and regulations**, particularly the **Philippine National Standards (PNS)** and **Republic Act 10611 (Food Safety Act)**. Learners understood the importance of complying with these standards to ensure consumer protection. They were also introduced to essential quality and safety systems such as **HACCP (Hazard Analysis Critical Control Points), SSOP (Sanitation Standard Operating Procedures), GMP, and CGMP**, which are fundamental in maintaining safe and high-quality food products.

Furthermore, the LAS highlighted the **concept of halal**, including its religious significance, dietary laws, and certification process. Learners gained understanding of permissible and prohibited foods as well as the proper **procedures for halal slaughter**, which are important for cultural sensitivity and market inclusivity in food processing.

Lastly, the LAS equipped learners with knowledge of the **tools, materials, and equipment used in food processing and fish product packaging**, enabling them to identify and properly use these resources in practical applications.

In summary, the LAS successfully integrated **historical knowledge, modern innovations, regulatory frameworks, cultural considerations, and technical skills**. It prepared learners to become competent, responsible, and informed individuals capable of participating in the food processing industry while adhering to safety, quality, and ethical standards.